

chapter, within 5 days of receiving the test results. The report must describe the equipment involved in the leak, the test results, any contamination which resulted from the leaking source, and the corrective actions taken up to the time the report is made.

(e) *Exemptions from testing requirements.* The following sealed sources are exempt from the periodic leak test requirements set out in paragraphs (a) through (d) of this section:

- (1) Hydrogen-3 sources;
- (2) Sources containing licensed material with a half-life of 30 days or less;
- (3) Sealed sources containing licensed material in gaseous form;
- (4) Sources of beta- or gamma-emitting radioactive material with an activity of 100 microcuries (3,700,000 Bq) or less; and
- (5) Sources of alpha- or neutron-emitting radioactive material with an activity of 10 microcuries (370,000 Bq) or less.

§ 39.37 Physical inventory.

Each licensee shall conduct a semi-annual physical inventory to account for all licensed material received and possessed under the license. The licensee shall retain records of the inventory for 3 years from the date of the inventory for inspection by the Commission. The inventory must indicate the quantity and kind of licensed material, the location of the licensed material, the date of the inventory, and the name of the individual conducting the inventory. Physical inventory records may be combined with leak test records.

§ 39.39 Records of material use.

(a) Each licensee shall maintain records for each use of licensed material showing—

- (1) The make, model number, and a serial number or a description of each sealed source used;
- (2) In the case of unsealed licensed material used for subsurface tracer studies, the radionuclide and quantity of activity used in a particular well and the disposition of any unused tracer materials;
- (3) The identity of the logging supervisor who is responsible for the li-

censed material and the identity of logging assistants present; and

(4) The location and date of use of the licensed material.

(b) The licensee shall make the records required by paragraph (a) of this section available for inspection by the Commission. The licensee shall retain the records for 3 years from the date of the recorded event.

§ 39.41 Design and performance criteria for sealed sources.

(a) After July 14, 1989, a licensee may not use a sealed source in well logging unless the sealed source—

- (1) Is doubly encapsulated;
- (2) Contains licensed material whose chemical and physical forms are as insoluble and nondispersible as practical; and
- (3) The sealed source's prototype has been tested and found to maintain its integrity after each of the following tests:

(i) *Temperature.* The test source must be held at -40°C for 20 minutes, 600°C for 1 hour, and then be subject to a thermal shock test with a temperature drop from 600°C to 20°C within 15 seconds.

(ii) *Impact Test.* A 5 kg steel hammer, 2.5 cm in diameter, must be dropped from a height of 1 m onto the test source.

(iii) *Vibration test.* The test source must be subject to a vibration from 25 Hz to 500 Hz at 5 g amplitude for 30 minutes.

(iv) *Puncture test.* A 1 gram hammer and pin, 0.3 cm pin diameter, must be dropped from a height of 1 m onto the test source.

(v) *Pressure test.* The test source must be subjected to an external pressure of 24,600 pounds per square inch absolute (1.695×10^7 pascals).

(b) The requirements in paragraph (a) of this section do not apply to sealed sources that contain licensed material in gaseous form.

§ 39.43 Inspection, maintenance, and opening of a source or source holder.

(a) Each licensee shall visually check source holders, logging tools, and